

#### ABSTRACT OF THE DISCLOSURE

A method of adaptive multi-modulus equalization for an equalizer. A cost from a cost function is calculated according to a constant modulus algorithm (CMA). Equalizer  
5 coefficients are updated according to the cost, and modulus of each region is determined for a multi-modulus algorithm (MMA). The equalizer is switched to use the MMA when the cost reaches a first threshold. The MMA comprises several stages determined by thresholds, and the number of regions  
10 increases in every stage. The cost is calculated according to the MMA and modulus of each region. The equalizer coefficients are updated according to the cost, and modulus of each region is determined for the subsequent stage of the MMA. The equalizer is switched to the subsequent stage of  
15 the MMA when the MMA cost function output reaches the threshold corresponding to the current stage. The steps are repeated until the cost reaches a preset value. Then, the number of regions and equalizer coefficients are fixed to equalize the input signal.

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